

[What is claimed]

[Claim 1]

A two-color print data generating method having a main color and secondary color and comprising the following steps:

(a) a color reduction step for generating reduced-color image data in which each pixel color of full-color data is reduced to any one of the following specified colors denoted by color intensity of three primary colors,

(color 1, color 2, color 3) = (i, i, j)

(color 1, color 2, color 3) = (i, j, i)

(color 1, color 2, color 3) = (i, j, j)

(color 1, color 2, color 3) = (j, i, i)

(color 1, color 2, color 3) = (j, i, j)

(color 1, color 2, color 3) = (j, j, i)

(color 1, color 2, color 3) = (j, j, j); and

(b) a color conversion step for generating two-color print data by converting each specified color in the reduced-color image data to a main color, secondary color, or background color according to the following conditions:

(condition 1) convert the specified color denoted as (color 1, color 2, color 3) = (i, i, i) to the main color;

(condition 2) convert the specified color denoted as (color 1, color 2, color 3) = (j, j, j) to the background color;

(condition 3) convert the specified colors denoted as (color 1, color 2, color 3) \neq (j, j, j) and (color 1, color 2, color 3) \neq (i, i, i) to the secondary color.

[Claim 2]

A two-color print data generating method as described in claim 1, wherein each pixel of the full-color data is denoted (color 1, color 2, color 3) = (k_1-1 , k_2-1 , k_3-1) (where k_1 , k_2 , k_3 are integers of 3 or greater), threshold values defined for the first color, second color, and third color and the values k_1-1 , k_2-1 , k_3-1 are compared in step (a), and each pixel color of the full-color data is reduced to one of the specified colors denoted by i or j based on the result of the comparison.

[Claim 3]

A two-color print data generating method as described in claim 1, wherein the first color, second color, and third color are, in no particular order, red, green, and blue.

[Claim 4]

A two-color print data generating method as described in claim 1, wherein the first color, second color, and third color are, in no particular order, cyan, magenta, and yellow.

[Claim 5]

A two-color print data generating method having a main color and secondary color and comprising the following steps:

(a) a color reduction step for generating reduced-color image data in which each pixel color in full-color data is reduced to one of a specified number of colors;

(b) a color conversion step for generating two-color print data by converting each specified color in the reduced-color image data to a main color, secondary color, or background color;

(c) a color conversion selection step for setting the main color and secondary color, and selecting as the color conversion method used in the color conversion step (b) one of the following steps:

(b1) a first color conversion process for uniformly converting based on predefined conditions each specified color in the reduced-color image data to the main color, secondary color, or background color; and

(b2) a second conversion process for desirably converting each specified color in the reduced-color image data to the main color, secondary color, or background color based on a changeable conversion table linking each specified color to the main color, secondary color, or background color.

[Claim 6]

A two-color print data generating method as described in claim 5, wherein the color reduction step (a) is a color reduction step for generating reduced-color image data in which each pixel color of full-color data is reduced to any one of the following specified colors denoted by color intensity of three primary colors,

(color 1, color 2, color 3) = (i, i, j)

(color 1, color 2, color 3) = (i, j, i)

(color 1, color 2, color 3) = (i, j, j)

(color 1, color 2, color 3) = (j, i, i)

(color 1, color 2, color 3) = (j, i, j)

(color 1, color 2, color 3) = (j, j, i)

(color 1, color 2, color 3) = (j, j, j); and

the first color conversion method (b1) generates two-color print data by converting each specified color in the reduced-color image data to a main color, secondary color, or background color according to the following conditions:

(condition 1) convert the specified color denoted as (color 1, color 2, color 3) = (i, i, i) to the main color;

(condition 2) convert the specified color denoted as (color 1, color 2, color 3) = (j, j, j) to the background color;

(condition 3) convert the specified colors denoted as (color 1, color 2, color 3) \neq (j, j, j) and (color 1, color 2, color 3) \neq (i, i, i) to the secondary color.

[Claim 7]

A two-color print data generating apparatus comprising:

a reduced-color image data generating unit for generating reduced-color image data in which each pixel color of full-color data is reduced to any one of the following specified colors denoted by color intensity of three primary colors,

(color 1, color 2, color 3) = (i, i, j)

(color 1, color 2, color 3) = (i, j, i)

(color 1, color 2, color 3) = (i, j, j)

(color 1, color 2, color 3) = (j, i, i)

(color 1, color 2, color 3) = (j, i, j)

(color 1, color 2, color 3) = (j, j, i)

(color 1, color 2, color 3) = (j, j, j); and

(b) a print data generating unit for generating two-color print data by converting each specified color in the reduced-color image data to a main color, secondary color, or background color according to the following conditions:

(condition 1) convert the specified color denoted as (color 1, color 2, color 3) = (i, i, i) to the main color;

(condition 2) convert the specified color denoted as (color 1, color 2, color 3) = (j, j, j) to the background color;

(condition 3) convert the specified colors denoted as (color 1, color 2, color 3) \neq (j, j, j) and (color 1, color 2, color 3) \neq (i, i, i) to the secondary color.

[Claim 8]

A two-color print data generating apparatus as described in claim 7, wherein each pixel of the full-color data is denoted (color 1, color 2, color 3) = (k₁-1, k₂-1, k₃-1) (where k₁, k₂, k₃ are integers of 3 or greater), the reduced-color image data generating unit compares threshold values defined for the first color, second color,

and third color and the values k_{1-1} , k_{2-1} , k_{3-1} , and reduces each pixel color of the full-color data to one of the specified colors denoted by i or j based on the result of the comparison.

[Claim 9]

A two-color print data generating apparatus as described in claim 7, wherein the first color, second color, and third color are, in no particular order, red, green, and blue.

[Claim 10]

A two-color print data generating apparatus as described in claim 7, wherein the first color, second color, and third color are, in no particular order, cyan, magenta, and yellow.

[Claim 11]

A two-color print data generating apparatus comprising:

- a reduced-color image data generating unit for generating reduced-color image data in which each pixel color in full-color data is reduced to one of a specified number of colors;

- a print data generating unit for generating two-color print data by converting each specified color in the reduced-color image data to a main color, secondary color, or background color; and

- a color conversion selection unit for setting the main color and secondary color, and selecting as the color conversion method used by the print data generating unit one of the following methods:

- a first color conversion method for uniformly converting based on predefined conditions each specified color in the reduced-color image data to the main color, secondary color, or background color; and

- a second conversion method for desirably converting each specified color in the reduced-color image data to the main color, secondary color, or background color based on a changeable conversion table linking each specified color to the main color, secondary color, or background color.

[Claim 12]

A two-color print data generating apparatus as described in claim 11, wherein the reduced-color image data generating unit generates reduced-color image data in which each pixel color of full-color data is reduced to any one of the following specified colors denoted by color intensity of three primary colors,

(color 1, color 2, color 3) = (i, i, j)
 (color 1, color 2, color 3) = (i, j, i)
 (color 1, color 2, color 3) = (i, j, j)
 (color 1, color 2, color 3) = (j, i, i)
 (color 1, color 2, color 3) = (j, i, j)
 (color 1, color 2, color 3) = (j, j, i)
 (color 1, color 2, color 3) = (j, j, j); and

the first color conversion method generates two-color print data by converting each specified color in the reduced-color image data to a main color, secondary color, or background color according to the following conditions:

(condition 1) convert the specified color denoted as (color 1, color 2, color 3) = (i, i, i) to the main color;

(condition 2) convert the specified color denoted as (color 1, color 2, color 3) = (j, j, j) to the background color;

(condition 3) convert the specified colors denoted as (color 1, color 2, color 3) \neq (j, j, j) and (color 1, color 2, color 3) \neq (i, i, i) to the secondary color.

[Claim 13]

A data storage medium recording a program of a two-color print data generating method comprising the following steps:

(a) a color reduction step for generating reduced-color image data in which each pixel color of full-color data is reduced to any one of the following specified colors denoted by color intensity of three primary colors,

(color 1, color 2, color 3) = (i, i, j)
 (color 1, color 2, color 3) = (i, j, i)
 (color 1, color 2, color 3) = (i, j, j)
 (color 1, color 2, color 3) = (j, i, i)
 (color 1, color 2, color 3) = (j, i, j)
 (color 1, color 2, color 3) = (j, j, i)
 (color 1, color 2, color 3) = (j, j, j); and

(b) a color conversion step for generating two-color print data by converting each specified color in the reduced-color image data to a main color, secondary color, or background color according to the following conditions:

(condition 1) convert the specified color denoted as (color 1, color 2, color 3) = (i, i, i) to the main color;

(condition 2) convert the specified color denoted as (color 1, color 2, color 3) = (j, j, j) to the background color;

(condition 3) convert the specified colors denoted as (color 1, color 2, color 3) $\neq (j, j, j)$ and (color 1, color 2, color 3) $\neq (i, i, i)$ to the secondary color.